Maximizing the usage of technology-enhanced teaching and learning of science and mathematics in English program in the Malaysian secondary schools system*

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Abstract: This research is attempting to examine the effectiveness in the application of ICT (information and communication technology) and standardize courseware in ETeMS (English for Teaching Mathematics and Science) or PPSMI (Pengajaran and Pembelajaran Sains and Matematic dalam Bahasa Inggeris) in English program in the Malaysian secondary school system. Five dimensions of secondary school (type of school, demographic, leadership quality, teaching and learning culture, and teachers' personal and working experience) were examined to determine the maximizing usage of TEC (technology-enhanced classroom) in the learning program. In general, there is a significant difference among factors stated above with maximizing usage of TEC in teaching and learning of science and mathematics in English program. The learning culture is also closely related. In addition, the school and teaching staff are another two essential factors found to be the strong fundamental of maximizing the usage of technology in TEC teaching and learning with towering quality. This study represents an addition to the extant literature on maximizing the usage of technology-enhanced teaching and learning towards the excellence of education in the secondary school system. The maximizing usage of TEC teaching and learning environment within the secondary school system is pivotal towards achieving high quality human capital and improving the efficiency and integrity of technology-enhanced learning of science and mathematics in English program. This study provides further groundwork to assist existing education managers to improve work quality and deliver the maximizing usage of TEC teaching and learning towards the excellence in secondary education.

Key words: technology-enhanced teaching and learning; English for Teaching Mathematics and Science (ETeMS/PPSMI); Malaysian secondary school system

1. Introduction

The Malaysian government has emphasized on the importance of ICT and interactive computer technology teaching and learning process in education system since 1986. The Ministry of Education has architect to promote various ICT and computer-based teaching and learning application projects such as the application and

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management of CIE (Computer in Education) and computer-assisted teaching and learning. After realizing the importance of English language and upgrading the standard of English language among Malaysian students in the era of information technology, the inception of English for Teaching Mathematics and Science Program (ETeMS/PPSMI) which cost the government RM6 billion is on-tract to success. This mega project runs from 2002 to 2008 and covers the primary and secondary schools in the country stages by stages (Curriculum Development Center/Ministry of Education, Malaysia, 2004). It is estimated that the global expenditure on education and training is at over US$2 trillions, in which about 15% of the total is for the developing world (Stacey, 2000).

Today, the divided acceptance of ETeMS/PPSMI program after 8 years of implementation has been noticed. Students and parents from the urban fully accept the implementation, whereas rural students and parents show lukewarm respond (Sharifah Maimunah, 2003). Certain quaters are vocal against the continuation of this project, the staged forums and demonstration lately. Even the study carried out by Curiculum Development Center, the Ministry of Education, Malaysia (CDC-MOE) on students, understanding and achievement of mathematics and science through ETeMS (PPSMI) from 2002 until 2004 is unsatisfactory (CDC/MOE, 2004). But the most important concern in this study is maximizing acceptance and application of the usage and enhancement of technology in teaching and learning process, i.e., laptop, LCD (liquid cristal display) and courseware of mathematics and science in English by the mathematics and science teachers in the secondary school system in Malaysia. However, this forms the basis for the ongoing and future of collaborative, open and distance learning in the upper secondary and tertiary education system in Malaysia.

2. Related literature

The success in the implementation of the CAI (Computer Assisted Instruction), CIE and TETL (Technology Enhance of Teaching and Learning) programs in the Malaysian education system forms the basis for the open, collaborative and distance learning in the education system, where computer literacy is the main concern in the CAI and CIE. The mastering of English language in the ETeMS (PPSMI) was the booster of the usage of technology enhancement in the teaching and learning process. Malaysians' expenditure in the technology-based teaching and learning in education ranges from the equipping to the commissioning of all primary and secondary schools with state of art ICT infrastructures. Therefore, the Malaysian government's mega initiative will be proven as a catalyst towards ICT and TETL application and management in the education system of the country.

Technology-driven teaching and learning process in the curriculum is due to the emerging digital technologies. Indefinitely, it has increased the interest in the computerized delivery of education that led to e-learning through electronic mail, Internet and intranet, World Wide Web (www) and multimedia. Alexander (2001) noted that using technology in learning would produce advantages like improving the quality of learning and access to education and training, reducing cost of education and improving the cost-effectiveness.

Educational change and acceptance toward a new language took place based on 4 components, i.e., the process of socio-culture, the growth of language, academia and cognition. Study conducted shows that the Malaysian secondary students' acceptance of English language in the teaching of mathematics and science were good in the urban schools, whereas rural students needed a longer time frame to acquaint the new concept. However, the acceptance towards the usage of TETL process in classes has been very successful (Chew & Lee, 2008).

If any of the technology-driven learning is to be successfully implemented, the above-mentioned ideas need to be followed. By doing so, the uses of ICT would be able to reach 80,000 people worldwide (Sbarca, 2000).

Even Cisco system indicated that application of ICT learning was used for 38,000 employees across 225 offices in 80 countries (Gill, 2000).

There are 5 main factors that contribute to the maximizing usage of TETL of mathematics and science in English in the Malaysian secondary school system. It includes 5 dimensions of secondary school system in the country, i.e., types of school, demographic characteristics, leadership quality, teaching and learning cultures, teachers' personal and working experiences. The successful and maximizing usage of the technological application depends on the school administrators and teachers who must be well-versed with some characteristics of computer application. School administrators are persons appointed to manage and discharge duties in managing the application of ICT at school levels with the incorporation of technology enhancement in the teaching and learning in ETeMS/PPSMI program. They have to utilize much time on the management perspectives as to maximize the usage of the facilities in school.

Quality and cost-effectiveness in application and management of ICT and TETL depends very much on the school administrators and teachers, even though the government has supplied the entire basic necessary ICT infrastructure to schools throughout the country since 1980s and further supply and commission laptops and LCDs as additional units to facilitate the success of TETL in ETeMS/PPSMI program. School administrators and teachers are entrusted with duties in restructuring organization structure to manage the maximizing usage of ICT in schools. An administrator has to choose the best management models to manage ICT at school level. It would be the departmental approach as "top-down" organization, which describes the organization based upon the grouping of various activities into departments, because organization is a large machine that develops laws and principles, which govern the machine's activities (Terry, 1995). The general problems addressed here were how tasks are organized into individual jobs; how jobs are organized into administrative units; and how these are combined into departments. The result is the structuring of departments within an organization and each department containing a set of tasks to be performed by personnel in that department. Would it be adaptive organization, flexible organization, lateral organization, the horizontal corporations and/or the virtual organization because technology will enable a person to communicate with others without being physically located near them (Overholt, 1997; Pasternec & Viscio, 1998). This will move from classroom teaching and learning towards virtual class of distance and collaborative e-learning.

Furthermore, most of the management practices of today followed the system perspectives, contingency perspectives, contemporary applied perspectives and their various models, rather than maintaining the traditional hierarchical structures because many of them will increasingly make use of alliances among people and organizations (Lewis, Goodman & Fandt, 2001). School administrators should look into its feasibility and they could well be used in the school environment to determine the successful implementation of TETL and could also determine the efficiency in managing ICT in school. So it is of utmost important for school administrators in managing the application of ICT at school level to have some direct managing experiences and formal training in ICT management.

School administrators and teachers' leadership quality and style in technology enhancement in teaching and learning is also an important aspect that has to take into consideration in the maximization usage of technology at school level. A committed leader will see to the successful implementation and maximizing utilization of ICT project in school. Otherwise it will fail because of not just lack of resources but also human factors. It requires the same management commitment as other mission-critical organization-wide initiatives, it needs to be compelling to the audience, and it targets by offering the learners a resource that seems to be appealing, valuable and productive

to their goals and aspiration (Henri, 2001). The outcome and monetary waste will be tremendous as Morgan and Keegan had estimated that world expenditure on all forms of education especially in ICT, which will exceed US $2 trillion worldwide (Sisco System IQ Atlas, 2000).

As leaders in the school system, administrators should also be the teachers to the extend that at least could guide the other teaching staff in the application and management of ICT towards the maximum usage in the teaching and learning process. It is assumed that leaders who carry in their heads in the mental pictures of how the world works have a significant influence on how one perceives problems, opportunities and identifies courses of action and makes choice (Senge, 1990). Leaders' will plays its leadership role by helping everybody include himself/herself in the organization to gain more insightful views of current reality and this is also in-line with a popular emerging view of leaders as coaches, guides or facilitators. Therefore, a strong and well-respected leadership with a clearly defined task would get the best result by fairly directive (Lucey, 1995).

The cost, sources, time frame, infrastructure, management process and curriculum are of ultimate important because they are significant towards the implementation of ICT in the school system. The government plays its pivotal roles in terms of cost and sources, infrastructure and curriculum. The government has supplied and commissioned the basic ICT infrastructures to schools, as resources are needed for carry outing the ICT laboratory project.

The completion of the first phase and the starting of the second phase of ETeMS/PPSMI program in all schools nationwide whereby students are taught subjects like mathematics and science in English using laptops and LCDs with common software in class are progressing. All the resources and curriculum formulated by the Center of Curriculum Development Division of the Ministry of Education are based on the mission of the Ministry of Education with the mission statement formalized in 1995, which reflects clearly the Ministry's commitment towards achieving the goals of Vision 2020, namely, "To develop a world class quality education system which will realize the full potential of the individual and fulfill the aspirations of the Malaysian nation" (Malaysian Smart School Implementation Plan, 1997).

Money spent by government to facilitate all the resources and conduct in-service courses such as the ETeMS/PPSMI program (2003-2008) is amounting to RM6 billion. Further setting up of 4,000 ICT laboratories for schools nationwide inclusive of provision of ICT, hardware, software, operating system and ICT human resources shows that education sector in Malaysia is a big winner in terms of ICT allocation under the Budget 2003 (Computimes, 2002). Not only that, but the Selangor state government had also invested at least RM10 million in ICT in 2003 to boost the ICT literacy among states community and workforce (Ahmad, 2002). This allocation is just part of a RM50 million allocation under the Eighth Malaysian Economic Plan (2001-2005) to ensure that ICT continues to play a vital role in moving the state ahead in terms of economic and social development (Computime, 2002).

Computer-based learning market will expand to US$11 billion and world total spending will have risen from US$6 billion in 1998 to US$17 billion in 2004 (Little, 2001). Global expenditure on education and training is over US$ 2 trilion (Clarke & Hermens, 2001). So the huge expenditure put forward by the government is of utmost importance for the educational course of the country. As school administrators who have to carry out the implementation stages in the school system. They not only need to make full use and application of the technology but also must educate the students in their schools and offer innovative programs (Gunasekaran, McNeil & Shaul, 2002).

Supports of the education process are all in the way with key elements including providing learning materials and facilities for practical work or simulations, enabling questions and discussion and assessing and providing student-supported services (Alexander & McKenzie, 1998). All these elements could be found in the education

system through government fund as well as private vendors throughout the country.

To date, the country's implementation of ICT and computer-based learning application perspective favor to be generating success because the results from students show that the upgrade of achievement has been encouraging not only in the information technology subject sat by the year 3 and year 6 Malaysian secondary school students, but also in the achievements by the students from other forms in subjects like English language, mathematics and science also show progressive improvements.

In fact, the availability of broadband technology in the country now will increase the active learning options by making use of video conferencing, advanced animation technologies and virtual scientific laboratory. Electronic books have become more prevalent instead. All these will add values to the existing technology in schools for changing especially the education system which has already faced the fast-paced culture. By providing Internet and intranet facilities or e-learning solutions to the students, it will be able to turn changes into advantages and allow people and organization to keep up with dynamic changes in the global perspective.

Internet is beginning to significantly elevate the whole concept of learning by bringing together richness and extensive reach and developing a move from "point-driven" learning to learning that supports change and transition (Fry, 2001). Therefore, to conclude the cost, sources and resources, time frame and infrastructures and its significance towards the application and management of ICT in the school system, a more moderate development model has to be proposed likewise to eradicate the problems of implementation at the school level such as bandwidth, standards and application, culture, difficulties with a piecemeal approach, technical difficulties and lake of infrastructures.

Another significant aspect in the application and the management of ICT and CAL (Computer Assisted Learning) is the school culture. Even though there is a drastic change in terms of transforming school to a more technological centered one, the question posed here is whether the school community especially students are prepared for the change. Sometimes traditional methodology could still be used, however, because of the challenges from the outside world, change is needed. Therefore, change for the better needs to transform towards the technological challenge of the information age.

School culture can be analyzed through the relationships between people, namely, students, teachers and parents, and of course through the management of resources which includes physical space, and non-physical like time and people. Due to the fact that ICT and CAL are the core of education for future citizen and the kinds of changes designed in each school, how the changes modify the school culture and the changes that happened in the way teachers actually used ICT and CAL in their teaching and learning process (Azinian, 2001), teachers in school system could carry out the function to create new learning and teaching culture in preparing students to face the challenging world with fast paced technology.

In order to get rid off the existing conventional school culture, teachers are the agent for change. The conceptual framework for teachers' development calls for an integrated approach to the problems, that is, the various forms for teacher training and continuing support are combined with activities aimed at influencing the system in which the teachers work daily (Nikolave, 2001). Therefore, teachers in the school system also play the pivotal role in being responsible to bring change in the teaching and learning culture of schools.

The effective change towards the school culture, where teachers must involve themselves in using the present advancement of ICTs, provided and commissioned in the school system to upgrade themselves towards the usage and applications of the ICT not only to the teaching and learning process of their students but also to their own learning process by continuing to upgrade themselves in life-long learning concepts and practices. Students in the

urban were also eager to learn due to their fascination towards the new techno-education curriculum as well as acceptance of English language as a medium of instruction in the teaching and learning of mathematics and science subjects. Therefore, teachers are the agent of change in this perspective, and success or failure in the maximizing of technology enhancement in curriculum and students' achievement lies with the teachers (Chew & Lee, 2008).

3. Methodology

3.1 Research objectives

The objectives of this study are to determine the proper and effective managing of ICT in school system and attempt to examine the effectiveness in the maximizing application of technology in the technology-enhanced school environment and standardize courseware in ETeMS/PPSMI program in the Malaysian secondary school system.

This study also looks into the possibility and feasibility of establishing the maximum usage of the TEC in the teaching and learning process in the secondary school system rather than furnishing teachers with laptops and LCD which are found to be difficult and ineffective in delivering the curriculum in schools.

3.2 Theoretical framework

The theoretical framework of this research is shown in Figure 1.

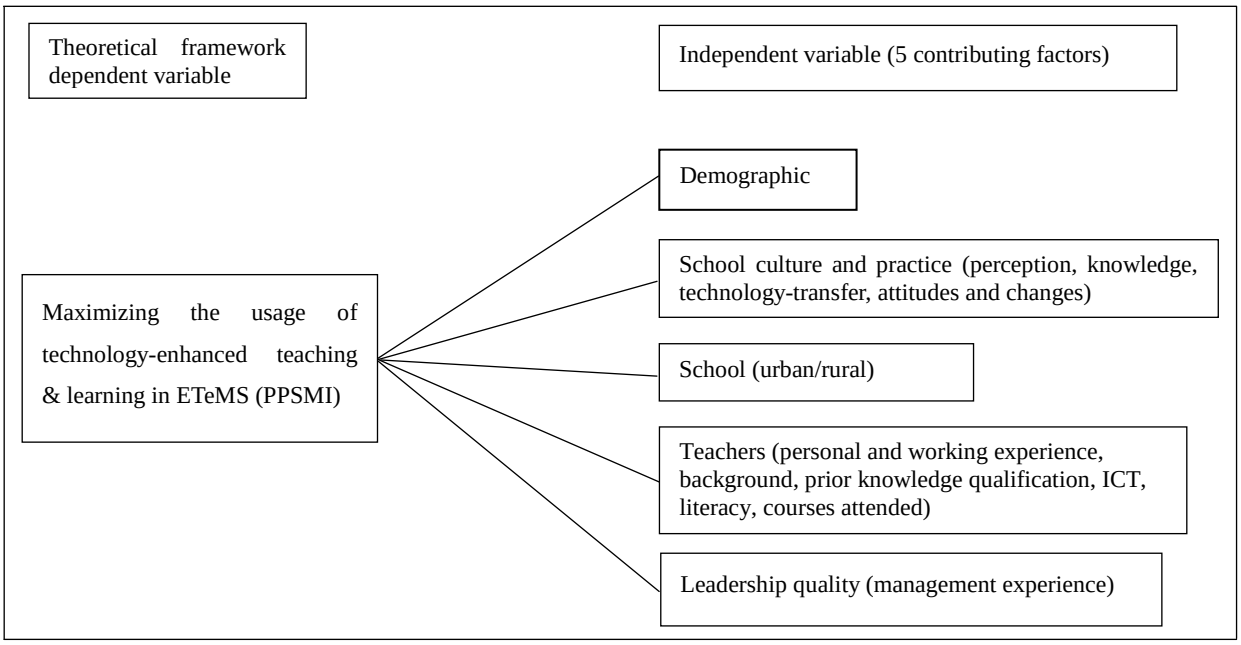

Figure 1 The theoretical framework

3.3 Research method

A survey questionnaire was given to 120 school administrators, computer coordinators and teaching staff from two selected states in west Malaysia (60 from urban schools and 60 from rural schools). The questionnaires contain 2 sections, namely, section A which contains questions on the respondents' demographics and section B on the dependent and independent factors. A 6-point measurement scale was used for the questions in part 2. Parametric statistical and non-parametric tests were used to analyze the data.

Another set of questionnaire was given to 120 students from 2 states in west Malaysia (60 from urban and 60

from rural schools respectively). The questionnaires were on the acceptance of ETeMS/PPSMI program and the teachers' usage of technology to enhance teaching and learning, i.e., laptop, LCD and courseware to teach mathematics and science.

4. Results and discussion

4.1 Reliability of instrument

Cronbach Alpha statistic is found to be 0.845, therefore, the reliability of the questionnaire is acceptable.

4.2 Descriptive statistics

Item 1 in Table 1 summarizes the respondents' characteristics. They are 85 males (70.8%) and 35 females (29.2%). Item 2 shows the respondents' position in the school which is for 20 school administrators (16.7%), 30 senior teachers (25%) and 70 teaching staff (58.3%). Item 3 summarizes the composition of race, which consists of 80 Malays (66.7%), 30 Chinese (25%) and 10 Indians (8.3%). Item 4 shows that 67.5% of the administrators possess bachelor degree and 32.5% possess postgraduate degree. And Item 5 shows that more than 80% of the administrators have more than 4 years experiences in teaching. Item 6 shows that 68.3% of teachers have experienced using ICT and technology-enhanced teaching and learning process in their curriculum.

Table 1 Summary of respondents' characteristics (school administrators and teachers)

Items	Frequency	Percentage (%)
Genders		
Male	85	70.8
Female	35	29.2
Respondents' position held in school		
School administrator	20	16.7
Senior teacher	30	25.0
Teacher	70	58.3
Race		
Malay	80	66.7
Chinese	30	25.0
Indian	10	8.3
Academic achievement		
Bachelor	81	67.5
Master/PhD	39	32.5
Experience in teaching		
0-3 years	20	16.7
4-6 years	35	29.2
7-9 years	33	27.5
>10years	32	26.7
Experience in using technology enhanced environment		
Yes	82	68.3
No	38	31.7

Note: N=120 (Urban=60; Rural=60).

Overall, the ETeMS/PPSMI program in Malaysia has been successful towards the urban and rural students. The maximum utilization of technology-enhanced teaching and learning in the classroom is at doubt especially in the rural schools. In surveyed students, only 47% students from urban schools respond towards teachers seldom use technology-enhanced teaching and learning, whereas teachers that they seldom utilization of technology-enhanced teaching and learning are shockingly at 75% (see Table 2).

Table 2 Students acceptance towards ETeMS (PPSMI)

Items	Location	Total (Percentile)	
I am happy with the usage of English language in the teaching of mathematics and science	Urban	50 (83%)	10 (17%)
	Rural	38 (64%)	22 (36%)
Implementation of ETeMS (PPSMI) program helps to upgrade my understanding in mathematics and science	Urban	42 (70%)	18 (30%)
	Rural	37 (61%)	23 (39%)
Teachers' teaching of mathematics and science in English is beneficial to me	Urban	36 (60%)	24 (40%)
	Rural	47 (78%)	13 (22%)
It is interesting and good in the teaching of mathematics and science session in school	Urban	42 (70%)	18 (30%)
	Rural	38 (64%)	22 (36%)
Teachers seldom use technology enhanced learning in class (laptop, LCD and courseware)	Urban	28(47%)	32(53%)
	Rural	45(75%)	15(25%)
In my opinion, the teaching of mathematics and science in English program is the right move in the secondary education system	Urban	50 (83%)	10 (17%)
	Rural	40 (67%)	20 (33%)

Note: N=120 (Urban=60; Rural=60).

Table 3 Results of Pearson correlation tests on management of ICT for maximizing usage of technology-enhanced teaching and learning process in ETeMS (PPSMI) programs in secondary schools

Item	r	p-value	N
Management of ICT for maximizing usage of technology-enhanced teaching and learning process in ETeMS (PPSMI) programs in secondary schools	0.777	<0.001	120

Notes: α=0.01; r=corrélation coefficient; N=Total respondent.

Table 3 shows that there is positive relationships in management of ICT for maximizing usage of technology-enhanced teaching and learning process in ETeMS/PPSMI program in secondary schools. The government-funded technology application for the ETeMS/PPSMI program in schools by providing and commissioning 30-50 laptops, 10 LCDs and courseware of mathematics and science in English to every school according to the population of students. The number of teachers sent for the teaching of mathematics and science in English program course prior to the program has increased. The supply of laptops to primary and secondary school teachers is for the teaching of mathematics and science in English for year 1 to year 3 of the primary schools and year 1 to year 5 of the secondary schools students. However, the setting up of the Technology Enabled Classrooms (TEC) is more cost-effective and reliable as well as maximizing the usage by teachers in the teaching and learning process in the secondary schools, so there should be an increase of population of students and decrease of funding and teachers' sharing of the laptops. Therefore, for the factors for a successful innovation in school, the knowledge and application of technology should be first, the supporting infrastructure secondly and, the empowering workers through professionals development thirdly (Szabo, 1996).

Table 4 Results of Pearson correlation tests on school administrators leadership quality in the management of ICT for maximizing the usage of technology-enhanced teaching and learning process in ETeMS (PPSMI) programs in secondary schools

Item	r	p-value	N
School administrators leadership quality in the management of ICT for maximizing the usage of technology-enhanced teaching and learning process in ETeMS (PPSMI) programs in secondary schools	0.785	<0.001	120

Notes: α=0.01; r=correlation coefficient; N=Total respondents.

Table 4 shows that there is a strong relationship in school administrators' leadership quality in the

management of ICT for maximizing the usage of technology-enhanced teaching and learning process in ETeMS/PPSMI program in secondary schools. Teachers' usage of laptops and LCDs in ETeMS/PPSMI program teaching and learning process could be carried out in the proper manner, where students are able to learn better when teachers teach by using the enhanced technology in their curriculum. Teachers and students are the users of technology in their teaching and learning process. Therefore, teachers would not face any problems in conducting their curriculum.

Table 5 Results of Pearson correlation tests on teachers' personal and working experiences to achieve the maximum usage of technology-enhanced teaching and learning process in ETeMS (PPSMI) programs in secondary schools

Item	r	p-value	N
Teachers' personal and working experiences to achieve the maximum usage of technology-enhanced teaching and learning process in ETeMS (PPSMI) programs in secondary schools	0.691	<0.003	120

Notes: α=0.01; r=correlation coefficient; N=Total respondents.

Table 5 shows that there is a moderate relationship between teachers' personal and working experiences in achieving the maximum usage of technology-enhanced teaching and learning process in ETeMS/PPSMI programs in secondary schools. The success or failures of the technology in education inception in teaching and learning process in the secondary school system of Malaysia until to-date, rely on the personal and working experiences and skills of the teachers and coordinators. Many of the secondary school teachers and ICT coordinators who are also teachers themselves with minimal knowledge of computer technology.

5. Conclusion and recommendations

The 5 dimensions of maximizing usage of technology-enhanced teaching and learning process in ETeMS/PPSMI programs in secondary school system, which comprised of types of schools, demography, leadership quality, teaching an learning culture and the teachers' personnel and working experiences, is all equally important. Futrell and Geisert (1984) quoted that school administrators and teachers are entrusted with duties and responsibilities. Administrators manage not only the school as a whole but also other units in the school. A successful and effective management of ICT to maximize the usage of technology-enhanced teaching and learning process in ETeMS/PPSMI programs in secondary schools depends very much on the tactfulness of the school administrators and teachers. Therefore, their challenges are to choose the best management models to manage the technology enhancement facilities by the incorporation of ICT and technology enhancing teaching and learning in school.

A nationwide and in-depth evaluation of the effectiveness in the application and management of ICT facilities and technology enhancement in the teaching and learning process in the Malaysian secondary school system has to be carried out to check its maximum utilization of ICT and its teaching and learning enhancement especially in the teaching and learning process of ETeMS/PPSMI program. There are signs of inefficiency in the application and managing of ICT in schools especially in the rural schools. For example, improper handling of equipment, malpractices, mismanagement, wastages, misuse of facilities, less acceptances of English language usage and teachers' reluctance to use English language to teach mathematics and science subjects even though the teachers were paid critical allowances, etc.. The effective deployment of ICT facilities in schools has to be properly planned because it comprises of laptops, digital presenter SDP-6500, overhead projector, desktop, stereo, DVD player, intranets, extranet and LCD, which offer a very capable platform for delivering a comprehensive

technology-enhanced teaching-learning and performance support environment and this will incorporate traditional methods as well as technology-led learning (Kevin, 2001). It could further utilize in the introduction of distance and collaborative learning in future secondary school system.

The government has put forth tremendous efforts in supplying the basic and advanced ICT infrastructures as well as formulating the ICT curriculum of the second school system that to be equipped into the technology-enhanced teaching and learning. Therefore, the teaching of social science and science in English should not have any problem of acceptance and application.

Teachers need to be given in-service courses to facilitate proper handling and usage of the technology-enhanced teaching and learning. Schools, which have not been equipped with the facilities, have to initiate themselves to facilitate the technology-enhanced teaching and learning environment. The possibilities of introducing and implementing, as well as maximizing the usage of technology-enhanced teaching and learning throughout the school system in the country under the future governmental plan, the weighs, problems and constraints on the structure that the technological advancements already exist have to be accurately dealt with.

School administrators concern could initiate themselves by organizing a continues in-house training program for their new teaching staffs in the basic usage of TEC and the proper handling of the commissioned sophisticated technology in the teaching and learning process.

The technology-enhanced teaching and learning classroom which connected the whole secondary education system could be very useful in term that the school administrators concern can organize uses in delivering the collaborative, distance education not only for the secondary school students concern but the local youth and adults who need education to upgrade the society during the off hours of the schools.

The Curriculum Development Center of the Ministry of Education has to scrutinize the maximum utilization of technology-enhanced facilities in teaching and learning facilities provided to schools. Special task force need to be set up to supervise the implementation and application of teaching and learning to the fullest.

The successful and maximizing usage of technology-enhanced teaching and learning in education especially the ETeMS/PPSMI program requires a team of honest, skillful, dynamic, experienced, confident and committed school administrators, ICT coordinators and teachers. They will champion the technology-enhanced teaching and learning in students' learning and postulate that competency in delivering effective instruction is a function of teachers' knowledge and skill.

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